

## CLAIMS

What is claimed is:

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B1
- 1 1. A method of form line following, comprising the steps of:  
2 defining a first form line using two or more terrestrial locations;  
3 defining a second form line using positioning data derived from GPS data and a  
4 swathing offset; and  
5 updating said second form line according to one or more deviations from said second  
6 form line.

- 1 2. A method as in claim 1 wherein said step of updating comprises the steps of:  
2 following said second form line defined by said positioning data and said swathing  
3 offset;  
4 deviating from said second form line to accommodate one or more terrain features;  
5 collecting new GPS data during said steps of following and deviating and computing  
6 one or more positions therefrom; and  
7 ~~defining an updated second form line using said positions.~~

- Sub  
B2
- 1 3. A method as in claim 2 further comprising the step of defining a third form line using said  
2 positions and said swathing offset.

- 1 4. A form line following apparatus, comprising  
2 a vehicle fitted with a GPS receiver configured to receive GPS data and GPS  
3 correction information and to compute position information therefrom; and  
4 a processor configured to compute form line following information from said position  
5 information and to update said form line following information in response to form line  
6 deviation information.

1 5. A form line following apparatus as in claim 4 further comprising a display device  
2 configured to receive and display said form line following information.

1 <sup>5</sup> 6. A form line following apparatus as in claim <sup>4</sup> 5 wherein said vehicle is further configured  
2 with an automatic steering apparatus configured to accept steering inputs according to said  
3 form line following information and to provide steering outputs to control said vehicle in  
4 accordance therewith.

*Sub B3*  
1 7. A method of form line following, comprising the steps of:  
2 computing a form line pattern for at least a portion of a plot of land from one or more  
3 data values retrieved from a computer readable storage medium, said data values associated  
4 with terrestrial locations comprising said portion of said plot of land;  
5 controlling a vehicle so as to follow said computed form line pattern over said plot of  
6 land using positioning information provided by one or more sources of GPS information;  
7 computing an updated form line pattern in response to form line following correction  
8 inputs, said updated form line pattern being derived from said positioning information; and  
9 controlling said vehicle so as to follow said updated form line pattern.

1 <sup>7</sup> 8. A method as in claim <sup>6</sup> 7 wherein said positioning information is provided by one or more  
2 GPS satellites.

1 <sup>8</sup> 9. A method as in claim <sup>6</sup> 7 wherein said positioning information is provided by one or more  
2 pseudolites.

1 <sup>9</sup> 10. A method as in claim <sup>6</sup> 7 wherein said positioning information is provided by a GPS  
2 receiver housed within said vehicle.

1 <sup>10</sup> 11. A method as in claim <sup>6</sup> 7 wherein said positioning information is provided by a GPS  
2 receiver located remote from said vehicle.

12. A method of applying chemicals to an agricultural field, comprising the steps of:  
operating a spraying apparatus along a first intended form line so as to apply chemicals to a first portion of a field; and  
operating said spraying apparatus along a second intended form line so as to apply chemicals to a second portion of said field,  
wherein while operating said spraying apparatus, deviations from said first intended form line are accounted for during one of said steps of operating said spraying apparatus.

1 13. A method as in claim 12 wherein said deviations are accounted for by computing said  
2 second form line so as to cause said spraying apparatus to follow a path through said field  
3 which accounts for said deviations from said first intended form line.

14. A method as in claim 12 wherein said deviations are accounted for by applying chemicals only to a selected area of said field while operating along said first form line, said selected area configured so as not to encroach upon said second portion of said field.